



Early Journal Content on JSTOR, Free to Anyone in the World

This article is one of nearly 500,000 scholarly works digitized and made freely available to everyone in the world by JSTOR.

Known as the Early Journal Content, this set of works include research articles, news, letters, and other writings published in more than 200 of the oldest leading academic journals. The works date from the mid-seventeenth to the early twentieth centuries.

We encourage people to read and share the Early Journal Content openly and to tell others that this resource exists. People may post this content online or redistribute in any way for non-commercial purposes.

Read more about Early Journal Content at <http://about.jstor.org/participate-jstor/individuals/early-journal-content>.

JSTOR is a digital library of academic journals, books, and primary source objects. JSTOR helps people discover, use, and build upon a wide range of content through a powerful research and teaching platform, and preserves this content for future generations. JSTOR is part of ITHAKA, a not-for-profit organization that also includes Ithaka S+R and Portico. For more information about JSTOR, please contact support@jstor.org.

SARCINA VENTRICULI IN MEDICO-LEGAL INVESTIGATION OF BLOOD STAINS.

W. N. SHERMAN, M. D., F. R. M. S.

The purpose of this article is to call the attention of the Society to the relation of the *Sarcina ventriculi* to certain conditions of the human body in life, and their possible importance in assisting us to form conclusions relative to the origin and character of blood or other stains upon clothing after death. The subject was suggested by investigations following a case of murder, the main circumstances of which are related further on.

Goodsir was the first to describe in the vomit of some patients peculiar groups of four cubical cells with rounded edges and closely placed against one another. These *Sarcina ventriculi* are of a greenish color. They are found in the contents of the stomach of man and beast, in health and disease, when the groups of four cells form smaller and larger aggregations. Occasionally *Sarcina* occur in boiled potatoes or egg albumen exposed to the air, but they are much smaller and have a yellowish tinge (Klein).

Beale mentions their having been found twice in the urine, and frequently by Bennett in the fœces. They were observed by Virchow in an abscess of the lung, and once by Jenner in the fluid of the ventricles of the brain. Beale concludes that they are distinct from all other fungi and quite peculiar, and in all cases coming under his observation the fluids containing them were distinctly acid.

Sarcina are usually found in the human stomach in a disease called pyrosis or water-brash, and in chronic gastritis of long standing. They are a vegetable fungi, the result of acid fermentation. In pyrosis the fluid containing *Sarcina* is often ejected from the mouth, and when existing in the fluids of the stomach they may be present in the saliva of the same subject (Budd). The writer has

observed this ejection of the fluid in a case of pyrosis existing only during periods of excessive indulgence in alcoholic liquors.

Pyrosis is frequently met with in Ireland and Scotland, says Aitken, and Linnæus writes that one-half the inhabitants of Sweden are subject to it, as a result of the large quantities of liquor drank in these countries. It is most common in advanced life.

Following are some of the facts concerning the case referred to: In the early morning was found the body of an old and very wealthy rancher. He lay upon the back porch, with one leg under the partly raised cellar door, the balance of the body on the floor of the porch in a large pool of clotted blood. The head and face were crushed, as if made by some heavy blunt instrument. Near the head, in a pool of blood, was a human footprint. The evidence tended to show that the old man, following an old custom, had started with a lighted candle to enter the wine cellar to treat a friend (he never invited strangers to the cellar). Holding the candle in one hand, he had stooped to raise the cellar door, when he was struck upon the head, knocking him senseless and extinguishing the candle. On the dead man's coat sleeve, near the shoulder, were the prints of a bloody hand, as though the murderer had in the darkness placed his hand upon the head (then wiped it on the coat) in order to more accurately complete his deadly work.

A strong motive was shown and circumstantial evidence of a strong and complete nature were produced against the accused. There were fresh blood spots upon the lower portion of his pants, blood stains upon his shoes, and upon his bridle, saddle, and rope halter. In one of these small clots were found the follicle and shaft of a short piece of gray hair.

The horse the murderer rode was traced toward his home by peculiar shoes, and the place was found where the rider had halted and removed the shoes. It was proven that the accused had on several occasions before the murder carried a mining hammer and a pair of pincers, and once lost them in the streets of a village and returned and claimed them.

The hammer and pincers were never found after the murder, although a large reward was offered for them. The clothing of the murdered man was burned by the mother of the accused. The pants and shoes of the accused were delivered to the writer shortly after the crime had been committed. The spots were fresh and distinct and easily soluble. The accused claimed that the blood on his clothing was that from a calf.

On one particular large spot near the bottom of the front of the pants were found the *Sarcina ventriculi* in large quantities. They were large, and had the usual character and appearance as to color, etc. The theory of the writer is that the blood was mixed with saliva or vomit, the footprint so near the head tending to show that the pants might have come in contact with the mouth or sufficiently near to have received secretions from the mouth. It is a well-known fact that vomiting often takes place after injuries of the head. In this instance some of the contents of the stomach may have become mixed with the blood.

It was a notorious fact that the murdered man was an habitual drinker and imbibed large quantities of acid wine daily.

The measurement of the blood corpuscles from the various stains corresponded with those of human blood and not those of the calf.

The proof of the murdered man having pyrosis during life was lacking, but the condition and habits of the man were proven, and they tended to show that the *Sarcina* were consistent with his habits. He was continually saturated with acid wine, and the conditions of the stomach, and even the blood itself, were favorable to the existence of *Sarcina ventriculi*, thus tending to show that the blood stains were from the victim and strengthening the evidence relating to their origin and identity.

After three years the writer is still able to identify the sarcinæ in the blood stains.

MERCED, CALIFORNIA.